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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,110	08/18/2003	Jeffrey F. Roeder	ATMI-605	3324
25559	7590	09/22/2004	EXAMINER	
ATMI, INC. 7 COMMERCE DRIVE DANBURY, CT 06810			ROCCHEGIANI, RENZO	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/643,110

Applicant(s)

ROEDER ET AL.

Examiner

Renzo N. Rocchegiani

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 1-31 and 49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32, 36-37, 39-45 and 47-48 is/are rejected.
- 7) ☒ Claim(s) 33-35, 38 and 46 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 1-31 and 49 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on June 29, 2004.

2. Applicant's election with traverse of claims 32-48 in the reply filed on June 29, 2004 is acknowledged. The traversal is on the ground(s) that the inventions are not distinct and separate. This is not found persuasive because the two sets of claims are drawn to different inventions. The first group is directed to a method of forming the layer, this process may be carried out in different manners such as CVD or even liquid deposition to name a few. The fact that the same compounds are claimed does not mean that the two inventions are distinct. The elected set of claims is only drawn to the compounds themselves. To determine patentability a different search and different considerations must be taken into account for each group. Thus, applicant's arguments are found not to be persuasive.

The requirement is still deemed proper and is therefore made FINAL.

3. In filing the response applicant incorrectly made the election of one group and of a species that does not fall within the group. During a telephone conversation with Ms. Marianne Fuierer on September 8, 2004, Ms. Fuierer confirmed that claims 32-48 were the elected claims.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 32, 37, 39, 42-43, 45 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication No. 2002/0081385 A1 (Kron et al.).

Kron et al. disclose a metalorganic precursor formula comprising R'SiX wherein R' comprises an organic group such as alkyl, alkenyl etc... having NR" groups therein wherein R" comprises a hydrogen or an organic group, and wherein X may be a halogen. (See [0011]-[0016]) The composition may further comprise an aluminum source reagent such as an alkylalane or a haloalane. ([0019]-[0021])

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6. Claims 39-41 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0187644 A1 (Baum et al.).

Baum et al. discloses a source precursor compound comprising the formula  $H_xSiA_y(NR'R'')_{4-x-y}$  wherein A may be a halogen and R' and R'' may be hydrogen or an alkyl group. ([0103]-[0105]) The composition may further comprise a silicon source reagent such as a silane. ([0108]-[0110])

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 36, 44 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2002/0081385 A1 (Kron et al.).

As stated in paragraph 2, all the limitations of these claims have been met except for teaching the specific types of compound that may be used.

Since Kron et al. discloses the interchangeability of the different species for the R' and R'' groups, the limitations of these claims are rendered obvious because based on the disclosure of Kron et al. one with ordinary skill in the specific art would be able to form the compound  $(Me_2N)_{4-b}SiX_b$  for example thus meeting claims 36 and 44 and may be formed as well as for example  $ClSiH_3$  thereby meeting the limitation of claim 48.

Because Kron et al. discloses the interchangeability of the species it would have been obvious to one with ordinary skill in the art to arrive at such compounds since it has been held that the use of conventional materials to perform their known functions in a conventional process is obvious. *In re Raner*, 134 USPQ 343.

***Allowable Subject Matter***

9. Claims 33-35, 38 and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renzo N. Rocchegiani whose telephone number is (571)272-1904. The examiner can normally be reached on Mon.-Fri. 8:00 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571)272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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